

OBSTETRIC PERFORMANCE RECALL ACCURACY (OPERA) AMONG A LOW LITERACY POPULATION IN SOUTHEAST NIGERIA.

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ABSTRACT

Context: Accurate obstetric history is of utmost importance in prenatal care to ensure optimal maternal and fetal outcomes.

Aims and Objectives: To determine the accuracy of recalled obstetric history among rural Igbo women of Southeast Nigeria.

Study design: Primiparous and multiparous women, who accessed antenatal care in a rural Mission Hospital over a two-year period, had their past obstetric histories recorded in a pro forma by trained research assistants. The information so obtained was compared with the previous obstetric data documented in the patients' hospital case files to evaluate their correctness. Univariate analysis was performed for statistical evaluation using the epi info package version 3.3.2 of 2005.

Results: Two hundred and thirty-five antenatal clinic attendees aged between 18 and 41 years were recruited for the study. Low literacy level is prevalent in rural communities of Southeast Nigeria. The ability of the women to accurately recall past obstetric events, including major pregnancy risk factors, was considerably limited. The recall accuracy for details of the immediate past pregnancy was 43.6% and 41.3% for the penultimate pregnancy. Patient's educational attainment, but not her age or parity, had significant influence on the recall ability.

Conclusion: The introduction of the Obstetric performance card for use in the busy antenatal clinics in low literacy rural communities of the developing countries such as Nigeria, will corroborate the information obtained from patients and greatly enhance the management and positive outcomes of the index pregnancy.

Key Words: prenatal, history, accuracy, low literacy, outcome, recall.

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INTRODUCTION

Good antenatal care is of paramount importance for the satisfactory maternal and neonatal outcomes of any pregnancy. Some studies have consistently demonstrated significant differences in maternal and perinatal morbidity and mortality rates between women who did, and those who did not utilize prenatal care in their pregnancies¹⁻³. In Nigeria, the unbooked women account for a substantial proportion of adverse pregnancy outcomes, especially in the rural communities^{3,4}. Adequate antenatal care identifies, predicts and manages pregnancy complications to ensure acceptable maternal and perinatal outcomes. Correct diagnoses of such complications are achieved through meticulous clinical history, physical examination and investigations.

Although obstetric complications may not always be adequately predicted or prevented, a history of complications such as preterm labour in a prior gestation may predict a recurrence in a subsequent pregnancy⁵.

Risk assessment and the classification of prenatal women into low risk and high-risk groups have remained an integral component of most antenatal policies. Various forms of this evaluation have been proposed and used in different centres and at different times. Consistent in all the modalities however is the prime importance of past obstetric history. Such antenatal risk classification prioritizes expectant mothers and ensures access to a higher level of care based on needs⁶. This is especially important in rural centres where health personnel are in short supply. The rural areas in Nigeria suffer from inequitable health/ personnel distribution⁷. Antenatal clinics, where available in the rural communities, are frequently over populated and the clients may overwhelm the care providers with a resultant diminution in the quality and content of care. In such situations, the medical history obtained from the patients may be inadequate, and may result in improper antenatal risk assessment and classification. To the best of the authors' knowledge, no previous study on the reliability of patients' antenatal booking documentation has been undertaken. This study evaluates the level of a parturient's recall of her past obstetric performance.

MATERIAL AND METHODS

STUDY BACKGROUND

Ndubia-Igbeagu in Izzi Local Government Area of Ebonyi State in Southeast Nigeria is a rural community and has harboured a mission hospital from the early 1960s. The hospital serves as the first point of contact with orthodox medical system for most of the population and also accepts referrals from the community and its environ. The population is mainly agrarian, Christian and animist with low literacy levels and high poverty rates.

STUDY DESIGN

This descriptive study involved prospectively collected data over a two-year period (January 2004 to December 2005). Primiparous and Multiparous women who delivered previously in the facility were consecutively recruited, following verbal consent, when they presented for prenatal care in their index pregnancies. At booking, trained research assistants, who were nurses in the antenatal clinic documented the clinical history including detailed past obstetric history of the patients in a pro forma. The hospital case records of the patients were retrieved and the documented previous obstetric data compared with their currently recalled history. The subjects were also asked to recall some previously performed routine laboratory investigations and these were similarly compared with the documented results. Excluded were all nullipara as well as multipara who did not deliver in the facility in their last or penultimate confinement and those whose case records were missing or incomplete. Data was analyzed using the Epi info statistical software package version 3.2 and presented in simple frequency tables.

RESULTS

Two hundred and thirty-five women were recruited and interviewed for the survey and their history compared with data extracted from their last delivery records. Of these, 98 who also had their penultimate delivery in the same hospital also had those records verified. All the respondents ranged in age between 18 years and 41 years with those in the 25 to 29 years age group predominating and making up 32.8% of the study group. There were 20 teenagers, and nine women were aged 40 years and above. Table 1 also shows the parity distribution where the majority were primiparous women. Thirty-one (13.2%) of the patients were grandmultipara. Over 92% of the women had either no formal education or just some form of primary education while 7.2% attended secondary school (Table 2). None attained any form of post secondary education. Analysis of the socio-economic stratification of the women revealed that none of the respondents belonged to social classes I or II.

Majority belonged to the lower echelons of the society, 50.2% in class V and 37.9% in class IV. A hundred and thirty-four (57.0%) of the patients had significant previous obstetric history. The primary post partum haemorrhage rate from documentation was 10.2%, puerperal sepsis 7.2%, hypertensive disorders 6.6%, obstructed labour 11.1% and ruptured uterus 4.8% (Table 3). In Table 4, a recall of the past obstetric events (in the last and the penultimate confinements) revealed that only in cases of instrumental delivery and in patients who received blood transfusion was the recall 100% accurate. The only parturient who had retained placenta in the penultimate delivery appropriately recollected it but this was only recollected by 20% of the women who had that complication in the last delivery. This difference was not statistically significant. Only 35.3% and 27.8% of the women who were delivered by Caesarean section in the last and penultimate deliveries respectively could relate the indications for their Caesarean delivery. None of the mothers could state whether the placentae were complete at delivery. Recall of primary post partum haemorrhage was 87% and over 90% in the last and penultimate deliveries respectively. Sixty-three point six percent and 60% of the patients respectively related that they had ruptured uteri in the last and penultimate deliveries. The preterm delivery rate was 7.8% but only 63.1% of the women in the two deliveries could adequately relate this event. Premature rupture of membranes was recorded in 13.5% of the mothers; accuracy of recall was 15.2% and 16.7% respectively for the last and the penultimate deliveries. Antenatal anaemia (last packed cell volume estimation less than 30% at term and before labour) was found in 25.8% of the mothers; but accuracy of history was 16.2% and 15.8% in the last and penultimate deliveries respectively.

Generally, the obstetric performance recall accuracy (OPERA) was 43.6% for events during the last prenatal period, parturition and puerperium and 41.4% for the penultimate pregnancy. Analyzing the last pregnancy and delivery only, no particular trend was apparent on the recall index (Table 4). However, teenagers had the highest recall accuracy, while para 2 women had the best recall index according to parity distribution. Thereafter there was a gradual decline in recall as the parity increased, with grandmultiparas only 33.3% accurate in their history. However analysis of the mean of recall according to age and parity using the student's t test revealed no statistical difference ($p > 0.05$). Education had a dramatic effect on the recall index, which increased as educational attainment progressed. Education had a significant effect on the recall index ($p < 0.05$) This effect was also noticeable in the social class distribution which was based on the woman's educational attainment and her spouse's income⁸

Recollection of investigation results was poor (Table 5), only 15% accurately recalling previous results. Furthermore only 17%, 26% and 2.1% of the women recalled accurately the genotype, blood group and Venereal disease research laboratory test results respectively.

Table 1: Age and Parity Distribution of the Pregnant Women (n=235).

Parameter	Number	Percentage(%)
Age (years)		
15-19	20	8.5
20-24	66	28.1
25-29	77	32.8
30-34	38	16.2
35-39	25	10.6
40-45	9	3.8
Parity		
1	72	30.6
2	45	19.1
3	58	24.9
4	29	12.3
≥5	31	13.2

Table 2: Educational Attainment and Social Classification of the 235 pregnant women.

Parameter	Number	Percentage (%)
Educational Status		
No formal	122	51.9
Primary	96	40.9
Secondary	17	7.2
Socio Economic Class		
III	28	11.9
IV	89	37.9
V	118	50.2

Table 3: Prevalence of four major determinants of Maternal Mortality among the subjects.

Risk Factor	Prevalence (%)
Primary Post Partum Haemorrhage	10.2
Sepsis	7.2
Obstructed Labour	11.1
Hypertensive disorders	4.8

Table 4: Accuracy of Recalled Obstetric Indices.

Index	Last Pregnancy/Delivery		Penultimate Pregnancy/Delivery	
	Freq	Recall (%)	Freq	Recall (%)
Instrumental Delivery	10	10(100.0)	2	2(100.0)
Retained Placenta	5	1(20.0)	1	1(100.0)
Primary PPH	23	20(87.0)	11	10(90.9)
Blood Transfusion	18	18(100.0)	8	7(87.5)
Threatened abortion	18	11(61.1)	10	6(60.0)
Ruptured Uterus	11	7(63.6)	5	3(60.0)
Preterm delivery	17	6(70.6)	9	5(55.6)
Antepartum Haemorrhage	14	10(71.4)	7	3(42.9)
Malaria in Pregnancy	48	24(50.0)	19	6(31.6)
Indication for C/S	51	18(35.3)	18	5(27.8)
Hypertensive disorder	42	17(40.5)	20	5(25.0)
Use of Oxytocin in Labour	68	10(14.7)	33	6(18.2)
PROM	13	5(15.2)	12	2(16.7)
Anaemia	68	11(16.2)	19	3(15.8)
Cervical/genital laceration	11	2(18.2)	12	1(8.3)
Puerperal Sepsis	18	5(27.8)	6	1(16.7)
Urinary Tract Infection	11	4(36.4)	3	0(0.0)
Secondary PPH	3	0(0.0)	0	0(0.0)

PROM: Premature Rupture of Membranes

CS: Caesarean Section. **PPH:** Postpartum Haemorrhage.

Table 5: Relationship between Recall Index and Age, Parity, Social Class and Educational Status of the Women.

Parameter	Recall Accuracy (%)
Age (years)	
15-19	58.3
20-24	42.1
25-29	34.4
30-34	44.8
35-39	35.6
40-44	46.3
Parity	
1	47.3
2	51.5
3	44.5
4	41.4
≥5	33.3
Educational Status	
No formal education	23.6
Primary education	42.5
Secondary education	64.5
Social Class	
III	56.6
IV	52.7
V	21.4
Investigation results	
Genotype	40 (17.0)
Blood Group	61 (26.0)
Venereal Disease Research Laboratory Test	5(2.1)

THE PAST OBSTETRIC PERFORMANCE CARD (POP-card)

Name: Age: Parity:
Blood Group:
Genotype:
Antenatal risk factors noted:
Mode of delivery (including indication if by C/S)
Gestational Age at delivery:
Intrapartum complications:
Postpartum complications:
Fetal Outcome (including birth weight)

DISCUSSION

This study has shown that Igbo women in rural Southeast Nigeria, have a high illiteracy rate and low socio economic esteem. These factors- low literacy level and high poverty rates are important determinants of the health status of a population. Numerous studies^{2,3,9} have linked high maternal and perinatal morbidity and mortality rates to these demographic markers. Paucity of education impacts negatively on the health seeking behaviour of women especially in the face of economic disability. This scenario in the rural communities tends to subjugate womanhood to the dictates of the men who often make important reproductive health decisions for which they are not the primary beneficiaries. Such decisions may thus be based on other extraneous factors rather than the health needs of the woman. The prevalence of major obstetric risk factors in a rural population is also highlighted in this study. Excluding criminal abortion, the major antecedents of maternal mortality were all recorded among our study population. The primary post partum haemorrhage (PPH) rate was 10%. Uterine rupture and obstructed labour were seen in 15.9% of the cases. In an earlier study from the centre, uterine rupture accounted for 31.9% of Maternal deaths¹⁰. These obstetric risk factors independently and collectively have a bearing on the index pregnancy and its outcomes and as such are an important history to be carefully elucidated. The ability to recall obstetric history accurately was very poor in this study population. The obstetric performance recall accuracy (OPERA) was 43.6% for the last pregnancy and this declined to 41.4% for the penultimate gestation. The 'OPERA' determines the reliability of a prenatal mother's history in the current pregnancy. A low OPERA score impacts negatively on accurate assessment and classification of antenatal risk. Consequently crucial preventive and therapeutic measures that could be instituted are omitted in the retinue of management. It was surprising to observe that major obstetric complications and maternal mortality determinants such as postpartum haemorrhage and ruptured uterus could not be properly recounted, and that only about

a third of those who underwent Caesarean section could properly relate the indications for their surgery. Though teenagers and women who had had two previous deliveries had better recall ability, no particular trend was discernible in the relationship between OPERA and the age and parity of the respondents. It is possible that the older the woman and the more the deliveries, the greater the tendency to forget or mix up events of the past obstetric performance. The influence of education and social strata was very significant, with the more educated women having a better recollection. However, it is noted that accurate recollection of an event depends on clarity and understanding as the event unfolds, and this is subject to adequate information from and appropriate communication with, a competent source explaining the events. This survey revealed a significant communication gap between the care providers and the parturients. Many patients, for instance indicated that they were informed only of the need for a Caesarean delivery but never the reason.

Recollection of fetal outcomes was also poor. A majority of the women did not know the birth weights of their babies. A history of a previous delivery of a macrosomic baby will entail screening for gestational diabetes mellitus in the index pregnancy¹¹. This is omitted when such history is lacking and may affect the outcome of the index pregnancy. Most of the women could not recount results of investigations performed on them. The recall accuracy of 15% of investigation results implies that such tests may be repeated where documentation is deficient and at extra cost to the patient. This may be significant in a low resource setting. Furthermore, in dire emergencies, invaluable time may be lost in repeating investigations such as blood grouping and Genotype that had previously been performed.

CONCLUSION

The obstetric performance recall accuracy (OPERA) in a rural low literacy antenatal population of a developing country is often low and implies poor reliability of any history obtained in the index pregnancy. Prenatal risk assessment, classification and management may consequently be defective. We suggest the introduction of Past Obstetric Performance card (pop-card), which summarizes a patient's previous obstetric history, recording major risk factors and events. This card should be kept by the patient and presented to the care provider in a future pregnancy. Such a card (as the pro forma attached) will complement the patient's own history, establish objective prenatal classification, and ensure adequate obstetric and optimal maternal and fetal outcomes. Long term measures that may improve the 'OPERA' in a low literacy setting such as the community studied include girl-child education,

literacy campaigns, and female empowerment.

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